

REMARKS

This is a Request for Continued Examination (RCE) in response to the Final Office Action dated June 13, 2005, in which a three (3) month Shortened Statutory Period for Response expired on September 13, 2005. Claims 25, 31, 32, 34, and 37 have been amended. Claims 29, and 38-42 have been canceled. No new claims have been added. No new matter has been added to the application. The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090. Claims 25-28, 30-32, 34, and 36-37 are pending.

Allowable Subject Matter

Applicants thank Examiner Blount for indicating that claims 31 and 37 would be allowable if rewritten in independent form, which would include all of the limitations of the base claims and any intervening claims. Applicants have amended claims 31 and 37 to be in independent form. Claims 31 and 37 are now in an allowable condition.

Rejections Under 35 U.S.C. § 103(a) In View of Reid et al.

The Examiner rejected independent claims 25-27, 30, 32, and 38-41 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,103,548 to Reid et al. (hereinafter referred to as "Reid"). Of the rejected claims, claims 25 and 32 are independent claims. Claims 38-41 have been canceled, thus rendering the rejection herein as moot with regard to those claims.

Reid teaches the use of a split sleeve 66 and mandrel 10 to expand a single bushing 68 into tight contact with an opening 88 in a work member 84 (column 1, lines 40-65). Reid teaches that split sleeve 66 is the type disclosed in U.S. Patent Nos. 3,566,662 or 3,665,744 (column 1, lines 32-38). U.S. Patent Nos. 3,566,662 to Champoux discloses "a sleeve 20 having a slot 22" (column 3, lines 34-35 and Figures 1 and 6). U.S. Patent No. 3,665,744 to Harter discloses "a thin wall, circumferentially discontinuous sleeve" (column 1, lines 59-60 and Figures 3, 7, and 9). In both Champoux and in Harter, the discontinuity in the split sleeve is necessary so that the split sleeve will contract and be removable after being radially expanded

into a hole with a mandrel. Reid teaches that the split sleeve 66 is the type disclosed in Champoux or Harter so that the split sleeve 66 acts like a spring in which stored energy in the split sleeve 66 allows it to contract and be removable after being radially expanded by the mandrel 10 (column 3, lines 58-61). Thus, the resulting product disclosed and taught by Reid is the single bushing 68 installed in the work member 84.

Applicants' claim 25 recites, *inter alia*, "an outer metal bushing comprising a first body having a first end and an opposite end, the first end having a first radial flange connected thereto, *the first end and the opposite end connected by a circumferentially seamless outer surface having an outer circumference and a circumferentially seamless inner surface having an inner circumference*, the circumferentially seamless inner surface adjacent a first opening that extends through the first body; an inner metal bushing comprising a second body having a first end and an opposite end, the opposite end having a second radial flange connected thereto, *the first end and the opposite end connected by a circumferentially seamless outer surface having an outer circumference and a circumferentially seamless inner surface having an inner circumference*, the circumferentially seamless inner surface of the inner bushing adjacent a second opening that extends through the second body" (emphasis added) and "*the inner metal bushing is rotationally and translationally fixed relative to the outer metal bushing* because of a sufficient radial displacement initiated at the circumferentially seamless inner surface of the inner bushing" (emphasis added). Support for the claim amendments can be found on page 2, lines 4-19 and in Figure 9 – bushing parts 52, and 58.

Applicants' claim 32 recites, *inter alia*, "an outer metal bushing comprising a first body having a first end and an opposite end, the first end having a first radial flange connected thereto, *the first end and the opposite end connected by a first circumferentially seamless outer surface and a first circumferentially seamless inner surface*, the first circumferentially seamless inner surface adjacent a first opening that extends through the first body; an inner metal bushing comprising a second body having a first end and an opposite end, the opposite end having a second radial flange connected thereto, *the first end and the opposite connected by a second circumferentially seamless outer surface and a second circumferentially seamless inner surface*, the second circumferentially seamless inner surface adjacent an opening that extends through the

second body” (emphasis added). Support for the claim amendments can be found on page 2, lines 4-19 and in Figure 9 – bushing parts 52, and 58.

Reid does not disclose, teach or suggest that the split sleeve 66 has a circumferentially seamless surface, that the split sleeve 66 includes a radial flange, or that the split sleeve 66 is rotationally and translationally fixed (*re:* claim 25) relative to the bushing 68. In contrast, Reid specifically teaches that the split sleeve 66 must have a discontinuity so that it will function as an expandable/contractable spring, thus permitting removal of the split sleeve 66 after radial expansion thereof. Consequently, claims 25 and 32 are not rendered obvious in view of Reid. In addition, claims 26-28, and 30, which depend from claim 25, and claims 34 and 36, which depend from claim 32, are allowable because they depend from allowable base claims, respectively.

Rejections Under 35 U.S.C. § 103(a) In View of Reid and Further In View of Champoux

The Examiner rejected independent claims 28, 29, 34, and 35 under 35 U.S.C. § 103(a) as being unpatentable over Reid and further in view of U.S. Patent No. 4,557,033 to Champoux. Claim 29 has been canceled. Claim 28 depends from claim 25, which is an allowable base claim. Claims 34 and 35 depend from claim 32, which is also an allowable base claim. The allowability of claims 25 and 32 is discussed above with respect to Reid and below with respect to Gänlein. Claims 28, 34, and 35 are allowable because they depend from allowable base claims.

Rejections Under 35 U.S.C. § 103(a) In View of Gänlein

The Examiner rejected independent claims 25 and 32 under 35 U.S.C. § 103(a) as being unpatentable over Gänlein (EP Application No. 0891007; hereinafter referred to as “Gänlein”). Applicants have reviewed Gänlein and note that the German Utility Patent 8901317 U1 (the “German patent”) referenced in Gänlein and enclosed herein, should be taken into consideration to better understand the motivation and teaching of Gänlein. Applicants respectfully traverse these rejections.

The German patent discloses a prior art bushing assembly in which a single bushing 1 includes a flange head 5 installed into a hole 3 in a web 4 by axially, radially, and laterally displacing bushing material (Abstract and Figures 2-3). A punch 15 is used to radially expand some of the bushing material into the web 4, while yet other bushing material is axially and laterally extruded beyond the rim of the hole 3 of the web 4 to form a second flange (Figure 3) on the opposite side of the web 4 from the flange head 5. The German patent teaches that the bushing material extruded beyond the rim of the hole 3 that forms the second flange provides axial fixity of the bushing 1 within the web 4 (Abstract and Figures 2-3). Further, radial fixity is provided between the bushing 1 and the web 4 in response to the punch 15 being drawn through the hole 10 in the bushing 1 to cause a radial expansion thereof (Abstract and Figures 2-3). A bushing cap 23 is affixed to the entire assembly with a threaded bolt 20a and a nut 21 (Figure 4). Accordingly, the German patent teaches that axial fixity is provided by extruding some of the bushing material out of the hole 3 in the web 4, while radial fixity is provided by radially expanding the cylindrical stem 2 of the bushing 1 to stably couple the bushing 1 in the hole 3 of the web 4 (Abstract and Figures 2-3).

Gänslein incorporates the teachings of the German patent into the illustrated and described bushing assembly (Gänslein, English translation; lines 6-8¹). Gänslein teaches that two nested bushings 1,2 are installed in a rail web 9 (Figure 2). The respective bushings 1,2 are rotationally and translationally fixed together (Gänslein, English translation; lines 20-21). Specifically, Gänslein teaches that axial fixity between the bushings 1,2 is obtained by drawing a mandrel 11 through the inner bushing 1 to axially and laterally extrude bushing material from the inner bushing 1 out of the hole of the rail web 9 and into a turned-out hollow 8 formed in the outer bushing 2 (Gänslein, English translation; lines 15-21). The axially and laterally extruded bushing material from the inner bushing 1 takes the form of a flange 14 (Figure 3). Of particular interest is that Gänslein teaches the following:

(1) the inner bushing 1 is axially and radially fixed to the outer bushing 2 due to the process of pulling the mandrel 11 through the hole of the inner bushing 1 after the inner and

¹ All references to the Gänslein patent, from this point forward, are made with respect to the English translation.

outer bushings 1,2 have been nested together and supported in the bore 10 of the rail web 9 as indicated in Figures 1-3; and

(2) the outer bushing 2 is axially fixed with respect to the rail web 9 only because the flange head 4 of the inner bushing 1 cooperates with the extrusion-formed flange 14 of the inner bushing 1.

Applicants' claim 25 recites, *inter alia*, "sufficient radial displacement initiated at the circumferentially seamless inner surface of the inner bushing, which provides a substantially equal, outwardly radial displacement of both the circumferentially seamless outer surface of the inner metal bushing and the circumferentially seamless inner surface of the outer metal bushing." Applicants' claim 32 recites, *inter alia*, "the inner and outer bushings are radially expandable by a like amount when the second circumferentially seamless inner surface of the second body is radially displaced" and "compressive stresses are developed in the inner metal bushing, the outer metal bushing, and in an area of a work member that receives the outer metal bushing when the second circumferentially seamless inner surface of the second body is radially displaced." Gänstein does not teach or provide any suggestion that the outer bushing 2 is radially expanded when the expansion mandrel 11 is pulled through the inner bushing 1 (Figure 3). Importantly, when Figure 2 is compared with Figure 3, it is apparent that the thickness of the inner bushing 1 is reduced while the thickness of the outer bushing 2 *does not change* in response to the radial and axial displacement of the inner bushing 1. In summary, Gänstein uses the teachings of the German patent to secure the inner bushing 1 with the outer bushing 2, but does not disclose, teach, or suggest radially expanding the outer bushing 2 into the bore 10 of the rail web 9.

In addition, the Examiner states that an increase in the fatigue life of the work member is inherent in the process taught in Gänstein. Applicants disagree. Because Gänstein does not disclose, teach, or suggest radially expanding the outer bushing 2 into the bore 10 of the rail web 9, in any fashion, compressive stresses cannot be developed in the rail web 9, thus it cannot be inherent that the Gänstein's process would produce a fatigue benefit in the rail web 9.

The above-mentioned features, among others, of claims 25 and 32 are not disclosed, taught, or suggested by Gänstein or by the combination of Gänstein and the German patent. In addition, the process taught by Gänstein does not inherently produce a fatigue life

benefit in the work piece. Consequently, independent claims 25 and 32 are not rendered obvious in view of Gänslein. In addition, claims 26-28, and 30, which depend from claim 25, and claims 34 and 36, which depend from claim 32, are allowable because they depend from allowable base claims, respectively.

Rejections Under 35 U.S.C. § 103(a) In View of Gänslein and Further In View of Reid

The Examiner rejected independent claims 38 under 35 U.S.C. § 103(a) as being unpatentable over Gänslein and further in view of Reid. Applicants have canceled claim 38, therefore the present rejection is rendered moot.

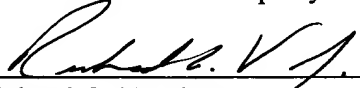
Conclusion

Overall, the cited references do not singly, or in any motivated combination, teach or suggest the claimed features of the embodiments recited in the independent claims, and thus such claims are allowable. The remaining claims depend from the allowable independent claims and are likewise allowable.

In light of the above amendments and remarks, Applicants respectfully submit that all pending claims are allowable. Examiner Blount is encouraged to contact Mr. Vershave by telephone to discuss the above and any other distinctions between the claims and the applied references, if desired. All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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